



CALCIUM



Summary

Calcium is a mineral. About three-quarters of the calcium we eat comes from dairy products and grains. Some foods have calcium added to them, such as cereals or soy milk. This is helpful for people who may not be able to eat dairy food.

About 99% of the body's calcium is stored and used in our bones and teeth, but it helps out elsewhere too. We need to get enough in our food to keep us healthy. Too little calcium (a deficiency) can lead to poor growth, weak bones and bad teeth. People who are growing bones (like teenagers or pregnant women) need more calcium. The NZ Ministry of Health estimates that about one-third of our 12 to 18 year olds may not be getting enough.

What is it?

Calcium is a mineral. We get most of our calcium from the fluids of plants and animals. It is also found naturally in our environment, such as in rocks like limestone.

What foods do we get it from?

About three-quarters of the calcium we eat comes from dairy products and grains, and most of the rest from vegetables, protein-rich foods, sugars, and fruits. Leafy vegetables, dairy, canned fish, legumes, dried fruits, nuts and seeds are great sources. If someone can't eat dairy foods they can also get calcium from fortified cereals or plant milks (e.g. soy, almond). If a food is fortified with calcium it means that calcium has been added to it.

Can other substances affect how much calcium we get?

Yes. Vitamin D helps with absorbing (absorb means to soak up or take in) calcium from food in the gut, and getting it into our bones so it's very important to make sure we also get enough of it. Some foods including spinach and rhubarb - and some legumes, grains and seeds - contain substances (oxalates and phytates) which make it harder to absorb their calcium, but they don't generally get in the way with absorbing calcium from other foods eaten at the same time.





Why do we need it?

Calcium is necessary for healthy bones and teeth. We also need it for nerve signaling (messages sent from the brain) and muscular contractions (when we tighten our muscles). And it's involved in balancing the strength of acid in our blood, the release of certain hormones and enzymes, and blood clotting. We need a daily supply because we're constantly recycling and replacing the calcium in our bones and losing it in our sweat and urine (pee). People who are growing bones (like teenagers or pregnant women) or less able to absorb calcium (like older people) need more calcium. The NZ Ministry of Health estimates that about one-third of our 12 to 18 year olds may not be getting enough calcium.

What happens if we have too much or too little?

Too little calcium (a deficiency) can lead to poor growth, weak bones and bad teeth. In older people a deficiency may lead to the condition called osteoporosis (a bone disease). A lesser deficiency may show up as tingling, twitches, numbness or muscle cramps. We're unlikely to get too much calcium naturally, but overdoing the calcium supplements for a long time might lead to constipation, kidney stones or an increased risk of heart attack from stiffened arteries.

How does the calcium content of foods compare?

Food – and serve size	Calcium (mg/100 g or 100 mL)	Calcium (mg/ per serve)
Sesame seeds – 1 tablespoon	980	84
NZ cheddar cheese – 2 cm cube	850	68
Low fat cottage cheese – 250 g <u>pottle</u>	86	215
Fortified Special K cereal – 1 cup	780	320
Canned sardines – 5 sardines	550	330
Canned salmon – 210 g serve	270	567
Dried figs – 1 fig	200	32
Raw kale – 1 cup	280	120
<u>Mesclun</u> salad leaves – 1 cup	150	56
Raw spinach – 1 cup leaves	69	30
Canned kidney beans – 1 cup, drained	50	110
Fortified fruit yoghurt (standard or <u>lite</u>) – 125 g <u>pottle</u>	190	238
Milk, yellow top <u>Calci+</u> trim (0.2% fat) – 250 mL cup	190	475
Milk, standard blue top (3.3% fat) – 250 mL cup	120	310
Fortified soy milk – 250 mL cup	110	290
White or <u>wheatmeal</u> sandwich bread – 2 slices	85-86	52-54
A milligram is one thousandth of a gram (g).		
Source: The Concise New Zealand Food Tables, 12th edition 2016 (2017), or food label information.		

The NZ Nutrition Foundation recommends a daily intake (RDI) of calcium of 1000mg for 9 to 11 year-olds, and 1300mg for 12 to 18 year-olds. Adults also need 1000mg -increasing to 1300mg for men over 70, and women who are over 50 or pregnant. Manufacturers use a RDI value of 800mg when calculating the % RDI values on packaging.

Funky fact

Calcium is the most plentiful metal in the human body). About 1.5% of our bodyweight is calcium : there's 750g of it (the weight of a large block of cheese) in a 12-yr-old who weighs 50kg!

References

Kid's Health, September 2014. "Calcium". Retrieved from: <http://kidshealth.org/en/teens/calcium.html#> 17 August 2017.

Ministry of Health, July 2012. "Food and Nutrition Guidelines for Healthy Children and Young People (Aged 2-18 years): a Background Paper. Partial Revision February 2015." Retrieved from: <http://www.health.govt.nz/system/files/documents/publications/food-nutrition-guidelines-healthy-children-young-people-background-paper-feb15-v2.pdf> 17 August 2017.

National Institutes of Health, 17 November 2017. "Calcium Factsheet". Retrieved from: <https://ods.od.nih.gov/factsheets/Calcium-HealthProfessional/> 17 August 2017.

New Zealand Nutrition Foundation, April 2013. "Calcium". Retrieved from: <https://www.nutritionfoundation.org.nz/nutrition-facts/minerals/calcium> 17 August 2017.

